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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/676,042 | 10/02/2003 | Mark H. Shipton | 117313 | 6932 |

25944 7590 07/20/2005

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

KOEHLER, ROBERT R

ART UNIT PAPER NUMBER

1775

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|--------------------------|-------------------------------|--------------------------------|--|
| Interview Summary | Application No. 10/676,042 | Applicant(s) SHIPTON ET AL. | |
| | Examiner Robert R. Koehler | Art Unit 1775 | |

All participants (applicant, applicant's representative, PTO personnel):

(1) Tarik Nabi, Patent Agent. (3) _____

(2) Robert R. Koehler, Primary Examiner. (4) _____

Date of Interview: 12 July 2005.

Type: a) ☐ Telephonic b) ☐ Video Conference
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.

If Yes, brief description: Proposed amendments to the specification and the claims.

Claim(s) discussed: 1-14.

Identification of prior art discussed: U.S. Patent No. 6,395,406 B1 (Sangeeta).

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: It was agreed that the application would be in condition for allowance by amending claim 1 to recite a process of forming a platinum aluminide diffusion barrier on a "titanium alloy substrate." Also, claims 7 and 11 would be amended to delete any reference to other dependent claims.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.



**ROBERT R. KOEHLER
PRIMARY EXAMINER**

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Proposed Amendment - 7 sheets total

PATENT APPLICATION

RRK.

7-12-05

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Mark Henry SHIPTON et al.

Group Art Unit: 1775

Application No.: 10/676,042

Examiner: R.R. Koehler

Filed: October 2, 2003

Docket No.: 117313

For: METHOD OF FORMING A DIFFUSION BARRIER ON A METALLIC SUBSTRATE

AMENDMENT UNDER 37 C.F.R. §1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the May 5, 2005 Office Action, please consider the following:

Amendments to the Specification;

Amendments to the Claims as reflected in the listing of claims; and

Remarks.

Amendments to the Specification:

Please replace the paragraph beginning on page 2, line 9, with the following rewritten paragraph:

According to a first aspect of the present invention, there is provided a method of forming a platinum aluminide diffusion barrier on a ~~metallic substrate which comprises a~~ titanium alloy substrate, the method comprising the steps of:

Please replace the paragraph beginning on page 2, line 14, with the following rewritten paragraph:

b) performing a reaction treatment on the thus applied platinum and aluminium which comprises subjecting the platinum particles and the aluminium particles to a temperature in the range of about 200°C to about 600°C for a time sufficient for the reaction between the platinum and the aluminium to form a diffusion barrier on the ~~metallic~~-substrate.

Please replace the paragraph beginning on page 3, line 5, with the following rewritten paragraph:

According to a second aspect of the present invention, there is provided an oxidation resistant structure comprising a ~~metallic~~-titanium alloy substrate (eg a titanium alloy aerospace component or portion thereof) and a platinum aluminide diffusion barrier disposed thereon, wherein the structure is formed by the method according to the first aspect of the present invention.

Please replace the paragraph beginning on page 3, line 10, with the following rewritten paragraph:

According to a third aspect of the present invention, there is provided an oxidation resistant aerospace component comprising a ~~metallic substrate comprising a~~ titanium alloy substrate and a substantially uniform platinum aluminide diffusion barrier disposed thereon,

said diffusion barrier being formed by the method according to the first aspect of the present invention.

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of forming a platinum aluminide diffusion barrier on a ~~metallic substrate which comprises a titanium alloy~~ substrate, the method comprising the steps of:
 - a) applying to the metallic substrate a coating comprising particulate platinum and particulate aluminium in an organic carrier;
 - b) performing a reaction treatment on the thus applied platinum and aluminium which comprises subjecting the platinum particles and the aluminium particles to a temperature in the range of about 200°C to about 600°C for a time sufficient for the reaction between the platinum and the aluminium to form a diffusion barrier on the ~~metallic~~ substrate.
2. (Original) A method according to claim 1, wherein the reaction treatment takes place in an inert atmosphere.
3. (Currently Amended) A method according to claim 1, wherein the coating is applied in more than one step, whereby the coating is built up on the ~~metallic~~ substrate.
4. (Original) A method according to claim 1, wherein the platinum particles and the aluminium particles are applied as the particles entrained in the organic carrier, as a single composition or sequentially as separate compositions.
5. (Currently Amended) A method according to claim 1, wherein the organic carrier comprises relatively volatile components and relatively non-volatile components, whereby the organic carrier forms a dry residue on the ~~metallic~~ substrate after application, anchoring the platinum particles and the aluminium particles for the reaction treatment to form the diffusion barrier.

6. (Original) A method according to claim 1, wherein the aluminium particles have an average effective diameter in the range of about 2 to about 10 μ m.

7. (Currently Amended) A method according to claim 1 ~~of the preceding claims~~, wherein the platinum particles have an average effective diameter in the range of about 2 to about 10 μ m.

8. (Currently Amended) An oxidation resistant structure comprising a ~~metallie~~ substrate which comprises a titanium alloy substrate and a platinum aluminide diffusion barrier disposed thereon, wherein the structure is formed by a method according to claim 1.

9. (Original) A structure according to claim 8, wherein the platinum aluminide diffusion barrier has a substantially uniform thickness over the major part of its area.

10. (Original) A structure according to claim 8, which comprises an aerospace component or a portion thereof.

11. (Currently Amended) A structure according to ~~any one of~~ claim 8, wherein the platinum aluminide diffusion barrier has a thickness in the range of about 2 to about 10 μ m.

12. (Currently Amended) An oxidation resistant aerospace component comprising a ~~metallie substrate which comprises~~ a titanium alloy substrate and a substantially uniform platinum aluminide diffusion barrier disposed thereon said diffusion barrier being formed by a method according to claim 1.

13. (Original) An oxidation resistant aerospace component as claimed in claim 12 wherein the diffusion barrier is continuous over an area of at least about 200cm².

14. (Original) A component according to claim 12 wherein the platinum aluminide diffusion barrier has a thickness in the range about 2 to about 10 μ m.

REMARKS

Claims 1-14 are pending in this application. By this Amendment, claims 1, 3, 5, 7, 8, 11 and 12 and the specification are amended. Reconsideration of the application is respectfully requested.

The Office Action rejects claims 7 and 11 under 35 U.S.C. §112, second paragraph. Claims 7 and 11 are amended to overcome the rejection. Accordingly, withdrawal of the rejection of the claims under 35 U.S.C. §112, second paragraph, is respectfully requested.

The Office Action rejects claims 1-14 under 35 U.S.C. §102(b) over Sangeeta (U.S. Patent No. 6,395,406). The rejection is respectfully traversed.

In particular, Sangeeta does not disclose or suggest a method of forming a platinum aluminide diffusion barrier on a titanium alloy substrate, as recited in independent claim 1.

Sangeeta teaches a method for preparing an aluminum alloy-containing coating composition with a slurry that contains a selected amount of aluminum combined with at least one additional slurry containing a selected amount of a second metal which forms an alloy with aluminum (abstract). Moreover, Sangeeta teaches that the slurry mixture is applied to a substrate that can be formed from a variety of metals or metal alloys (col. 5, lines 56-58).

Sangeeta also teaches that the substrate maybe a super alloy that includes titanium, and Sangeeta incorporates by reference U.S. Patent No. 5,399,313 and U.S. Patent No. 4,116,723 (col. 5, line 65 - col. 6, line 3). However, these two patents, incorporated by reference, teach that titanium is incorporated at about 3 to 4% or at about 1 to 5%. Accordingly, the substrate is not at a titanium alloy, but is simply a metal alloy that contains a small amount of titanium. For example, a titanium alloy substrate may contain titanium at about 40% or more. Thus, because Sangeeta fails to disclose or suggest a titanium alloy substrate, Sangeeta fails to disclose or suggest each and every feature of independent claim 1. Accordingly, independent

claim 1, and its dependent claims, are patentable over Sangeeta. As such, withdrawal of the rejection of the claims under 35 U.S.C. §102(b) is respectfully requested.

Also, because the priority date of Applicants' invention is October 21, 2002, Sangeeta is not prior art under 35 U.S.C. §102(b), but is prior art under 35 U.S.C. §102(e). The above arguments are hereby reiterated for the traversal of the rejection under 35 U.S.C. §102(e).

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-14 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Tarik M. Nabi
Registration No. 55,478

JAO:TMN/tje

Date: P R O P O S E D

OLIFF & BERRIDGE, PLC
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Telephone: (703) 836-6400

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